

Illicit Drug Overdose Deaths in BC

Findings of Coroners' Investigations

September 27, 2018



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Background

In recent years, a significant increase in drug-related deaths has affected families and communities across Canada. In British Columbia, unintentional illicit drug overdose deaths increased from 211 in 2010 to an estimated 1,450 in 2017. One of the main drivers of this increase was the introduction of a toxic synthetic opioid, fentanyl, into the illicit drug market.ⁱ In April 2016, the Provincial Health Officer declared a state of emergency in response to the surge in drug related overdoses and deaths.

The BC Coroners Service is mandated to investigate all unnatural, sudden and unexpected deaths in the province. The role of the coroner is to investigate each individual death to determine who has died, as well as when, where, how and by what means a person came to their death. The coroner may also make recommendations to prevent future deaths in similar circumstances. In the case of a suspected illicit drug overdose, the coroner typically attends the scene, may order post-mortem/toxicological examinations, and obtains information about the person's medical history and experience with substance use.

With the emergence of the overdose epidemic came a demand for more detailed information about illicit drug overdose deaths. In November 2016, the BC Coroners Service responded by creating the Drug Death Investigation Team (DDIT): a specialized team that works to inform evidence-based prevention by gathering data on illicit drug overdose deaths in a consistent and timely manner. Every suspected illicit drug overdose death in British Columbia is referred to the DDIT for investigation. An enhanced drug death investigation protocol was developed to allow for more consistent surveillance and analysis.

This report is a descriptive analysis of 872 completed illicit drug overdose investigations. The majority (613) of the completed cases are from 2016, with 259 cases from 2017. The intent of the report is to inform public health prevention efforts by identifying differences and commonalities among people who have died of illicit drug overdoses, as well as the circumstances surrounding these overdoses.

Inclusion Criteria

This report summarizes the data from illicit overdose deaths occurring in British Columbia between 2016 and 2017. Cases were included if an investigation had been completed by the Drug Death Investigation Team by the data extract date, May 2018. At that time, there were 613 completed cases in 2016 (62% of total suspected overdose deaths), 259 completed cases in 2017 (18% of total suspected overdose deaths), and 872 completed cases overall (35% of total suspected overdose deaths). There were no significant differences between completed cases and open cases by age group, sex, or region.

Inclusion Criteria: The illicit drug overdose category includes the following:

- Street drugs (Controlled and illegal drugs: heroin, cocaine, MDMA, methamphetamine, illicit fentanyl etc.)
- Medications not prescribed to the decedent but obtained/purchased on the street, from unknown sources or where origin of drug not known
- Combinations of the above with prescribed medications

The data presented in this report are based on coroner investigations, which include obtaining information from family, physicians, medical records, PharmaNet records, and other relevant sources.

Limitations

Illicit drug overdose cases can present investigational challenges that make it difficult to collect information. A lack of witnesses at drug-related scenes or the decedent's lack of contact with family/friends may make it challenging to obtain personal histories. The findings presented in this report are derived from coroners' investigations. They are based on a limited number of cases. Small numbers and the associated percentages should be interpreted with particular caution.

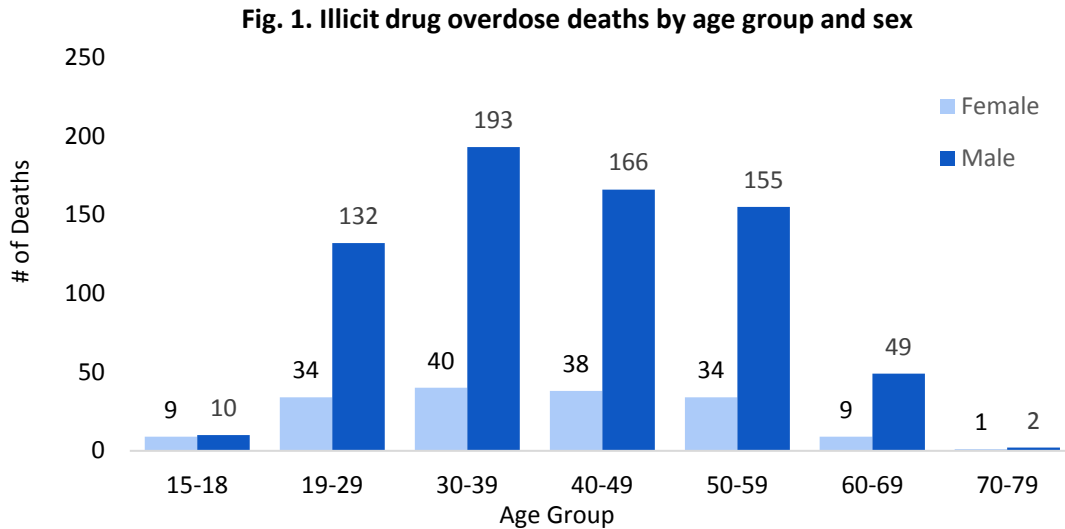
Highlights of Study

- 81% of people were male (707/872).
- Sixty-five percent of people had never been married (566/872).
- The majority of people lived and overdosed in private residences (72% or 674/872 and 63% or 549/872, respectively). In Vancouver Coastal, the percentage of people living in private residences was 54% (143/267). In other health authorities, this percentage ranged from 74 -82%. Thirteen percent of people in the study cohort were living in social/supportive/single room occupancy (SRO) housing, and 9% were homeless.
- 44% of people were employed at the time of death (382/872). Of those employed, 55% were employed in the trades and transport industry (209/382).
- 79% of people who died of illicit drug overdose had contact with health services in the year preceding death (690/872).¹ Over half (56%) of those people had contacts for pain-related issues (389/690). More than half of the cohort (455/872) (52%) were reported to have had a clinical diagnosis or anecdotal evidence of a mental health disorder
- More than three-quarters of people were reported to have been regular or chronic users of illicit drugs (77%, or 675/872).
- The most common mode of consumption among females was injection (45%). Smoking and injection were the most common modes of consumption among males (41% and 40%, respectively).
- The most frequently detected substances included illicit fentanyl (76% of deaths), cocaine (51%), alcohol (37%), and methamphetamine/amphetamine (33%).
- Illicit fentanyl was detected in a higher percentage of deaths among 15-29-year olds (85%) compared with 30-49-year olds (79%) and 50+-year olds (64%).
- The majority of people had used their drugs alone (69%, or 603/872). This was true across all health authorities, health service delivery areas, and age groups. Note that these individuals may have resided with others, but were unaccompanied at the time of consumption.

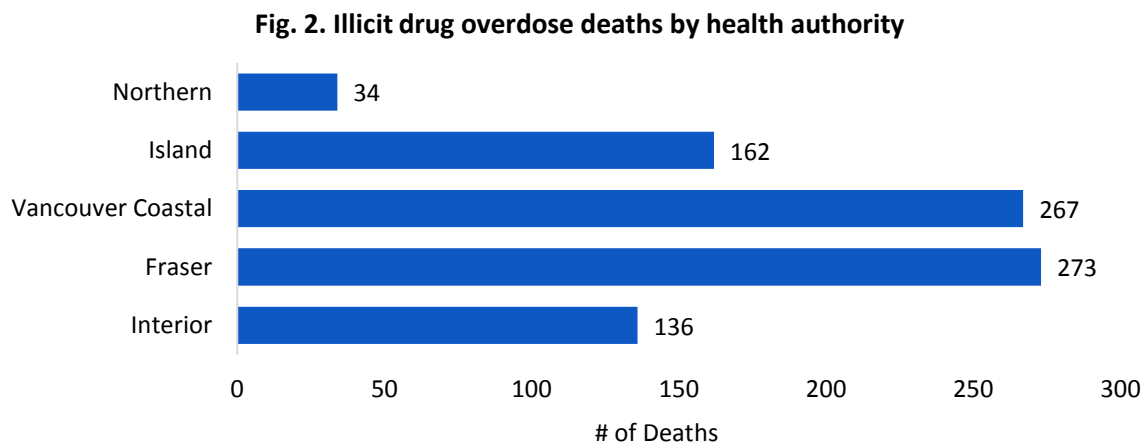
¹ Contact with health services includes emergency room visits, hospital admissions, and contact with community health services.

Population Demographics

Of the 872 people studied, 81% (707 people) were male and 19% (165 people) were female. These are similar to the proportions observed for 2016 and 2017 in an analysis of all illicit drug overdose deaths in BC from 2008-2018.ⁱⁱ Of the males in the study, 27% (193 people) were aged 30-39 and 23% (166 people) were aged 40-49. Of the females in the study, 24% (40 people) were aged 30-39 and 23% (38 people) were aged 40-49. (Figure 1).



Vancouver Coastal and Fraser health authority regions each accounted for approximately one third of the total number of illicit drug overdose deaths in the 2016/17 study cohort (Figure 2). See **Appendix** for more information about health authority regions.

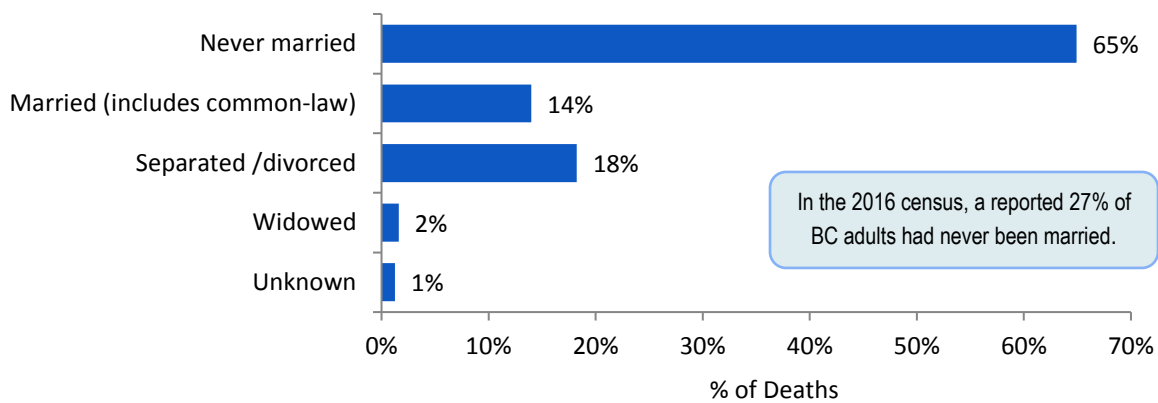


Marital Status

In the study cohort, 65% of people had never been married; 18% had been separated or divorced.

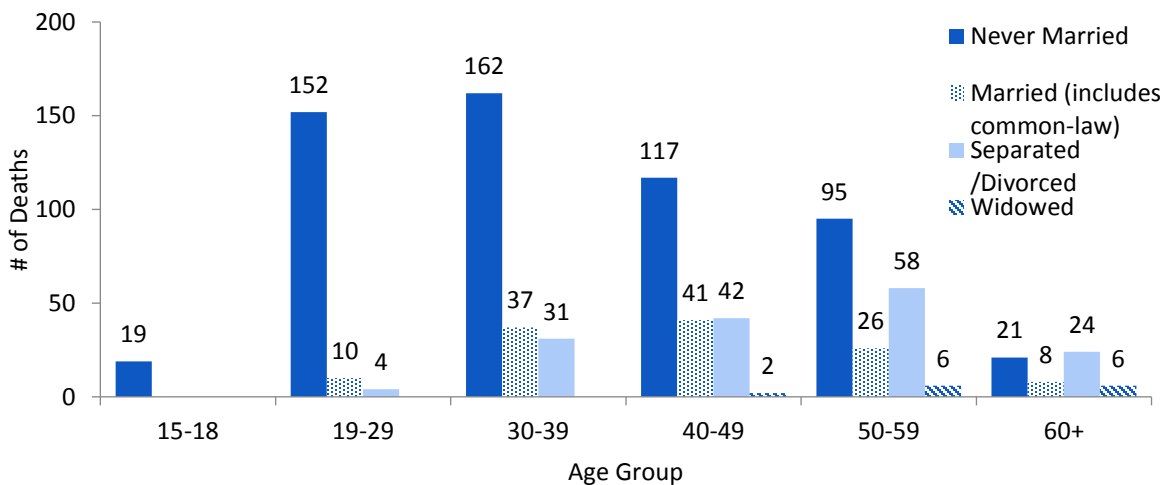
Of the 872 people studied, 65% were never married and were not in a common-law relationship at the time of death (Figure 3). This percentage is disproportionately high; in the 2016 census, a reported 27% of BC adults (15 years of age and older) had never been married.ⁱⁱⁱ

Fig. 3. Illicit drug overdose deaths by marital status



When looking at marital status by age, ‘Never Married’ was the most common status in all age groups other than 60+. In the 60+ age group, the most frequently reported status was ‘Separated/Divorced’ (Figure 4).

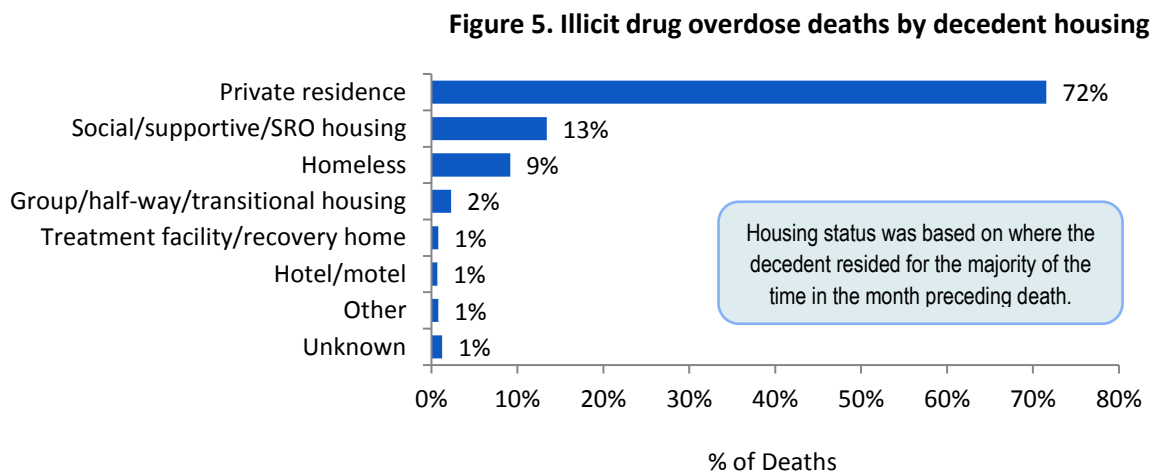
Fig. 4. Illicit drug overdose deaths by marital status and age group



Housing

In the study cohort, 72% of people were living in a private residence at the time of death; 13% were living in social or supportive type of housing; 9% were homeless.

Seventy-two percent of illicit drug overdose deaths occurred among people who were living in private residences (Figure 5). A private residence can be one’s own home, a shared home, or a friend/relative’s home. Housing status was based on where the decedent resided for the majority of their time in the month preceding death.



Note: SRO housing = single room occupancy housing

Seventy-eight percent of people aged 15-39 lived in a private residence and 7% lived in social, supportive, or SRO housing in the month preceding death. For 40-69 year olds, 65% were residing in a private residence and 19% were residing in social, supportive, or SRO housing. (Table 1).

| Housing | 15-18 | 19-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | Total |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Private residence ¹ | 18 | 127 | 181 | 135 | 125 | 35 | 3 | 624 |
| Social/supportive/SRO | - | 8 | 22 | 35 | 35 | 17 | - | 117 |
| Homeless | - | 21 | 17 | 21 | 19 | 2 | - | 80 |
| Group/halfway/transitional housing | 1 | 4 | 7 | 4 | 3 | 1 | - | 20 |
| Treatment facility/recovery home | - | 3 | 1 | 1 | 2 | - | - | 7 |
| Hotel/motel | - | 1 | 1 | 1 | 1 | 2 | - | 6 |
| Other | - | - | 1 | 4 | 1 | 1 | - | 7 |
| Unknown | - | 2 | 3 | 3 | 3 | - | - | 11 |
| Total | 19 | 166 | 233 | 204 | 189 | 58 | 3 | 872 |

¹A private residence can be one's own home, a shared home, or a friend/relative's home.

A higher percentage of people in the Vancouver Coastal health authority region than in other health authorities lived in social/ supportive/SRO housing (30% vs. 3-10%). The percentage of people living in private residences was 54% in the Vancouver Coastal health authority and higher (74-82%) in the other health authorities. The percentage of homeless decedents was highest in Fraser, Vancouver Coastal, and Island Health. (Table 2).

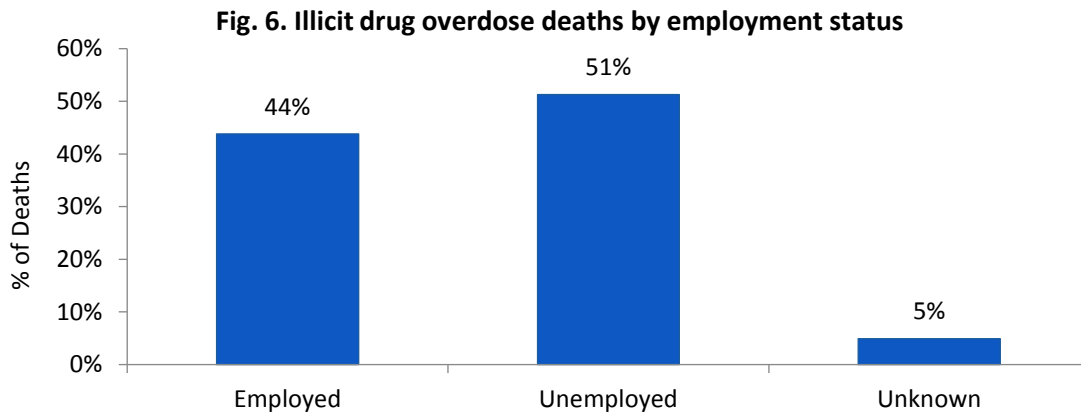
| Decedent Housing | Interior | | Fraser | | Van. Coastal | | Island | | Northern | | Total | |
|------------------------------------|-----------------|------------|---------------|------------|---------------------|------------|---------------|------------|-----------------|------------|--------------|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Private residence ¹ | 111 | 82 | 222 | 81 | 143 | 54 | 120 | 74 | 28 | 82 | 624 | 72 |
| Social/supportive/SRO | 10 | 7 | 7 | 3 | 81 | 30 | 16 | 10 | 3 | 9 | 117 | 13 |
| Homeless | 6 | 4 | 26 | 10 | 29 | 11 | 18 | 11 | 1 | 3 | 80 | 9 |
| Group/halfway/transitional housing | 5 | 4 | 8 | 3 | 4 | 1 | 3 | 2 | - | - | 20 | 2 |
| Treatment facility/recovery home | - | - | 4 | 1 | 3 | 1 | - | - | - | - | 7 | 1 |
| Hotel/motel | 3 | 2 | 2 | 1 | 1 | 0 | - | - | - | - | 6 | 1 |
| Other | - | - | 2 | 1 | 1 | 0 | 2 | 1 | 2 | 6 | 7 | 1 |
| Unknown | 1 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | - | - | 11 | 1 |
| Total² | 136 | 100 | 273 | 100 | 267 | 100 | 162 | 100 | 34 | 100 | 872 | 100 |

¹A private residence can be one's own home, a shared home, or a friend/relative's home.

²Percentages may not sum to 100 due to rounding.

Employment Status

Forty-four percent of the study cohort was employed at the time of death (Figure 6). Nearly half of males (49%) were employed while 24% of females were employed (Table 3). Unemployed individuals include people who were retired, students, on disability, or receiving income assistance. Note that these data are based on information provided by families, friends, and others in contact with the decedent.



¹Percentages may not sum to 100 due to rounding.

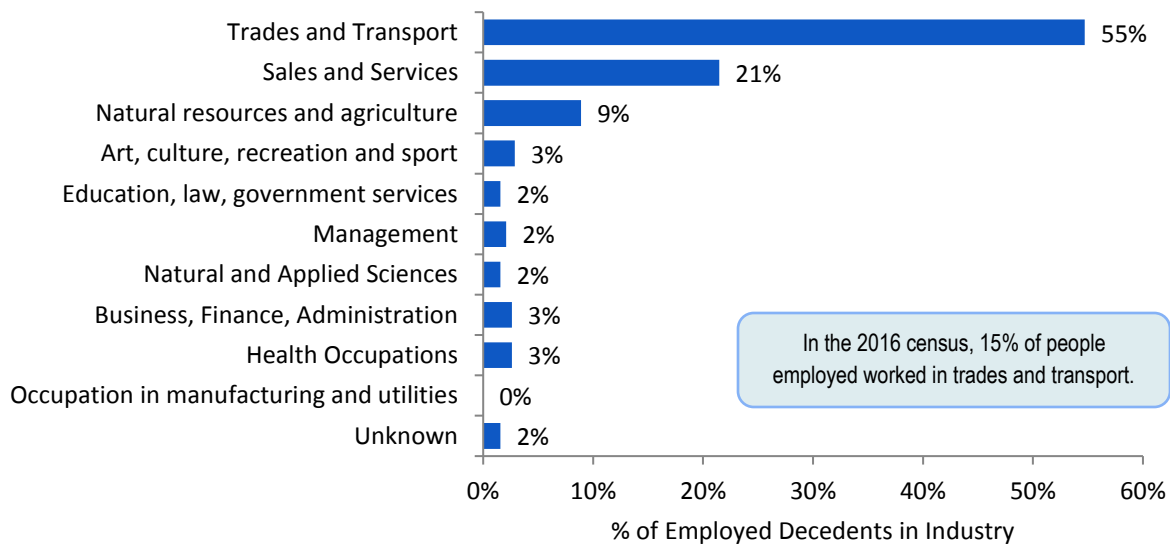
| Employment Status | Female | | Male | | Total | |
|--------------------------|------------|------------|------------|------------|------------|------------|
| | No. | % | No. | % | No. | % |
| Employed | 39 | 24 | 343 | 49 | 382 | 44 |
| Unemployed | 117 | 71 | 330 | 47 | 447 | 51 |
| Unknown | 9 | 5 | 34 | 5 | 43 | 5 |
| Total¹ | 165 | 100 | 707 | 100 | 872 | 100 |

Industry of Work

In the study cohort, 55% of people who died of an overdose and were employed at the time of death were reported by family/friends to be working in the trades and transport industry.

Of the 382 decedents who were employed at the time of death, over half were working in trades and transport (55%) while approximately one-fifth were working in sales and service (21%) (Figure 7)². The proportion working in trades and transport is higher than that reported in the 2016 Census, which found that 15% of people employed worked in trades and transport.^{iv} A recent report released by Fraser Health Authority also noted that the majority of males who were admitted to the hospital following a serious non-fatal overdose were employed in a trades industry.^v

Fig. 7. Illicit drug overdose deaths by industry of work



When looking at industry by health authority, 70% of deaths of employed individuals in Fraser Health Authority were in the trade and transport industry. Sixty percent of employed persons in the Northern and 55% of employed persons in the Interior region were in the trade and transport industry. (Table 4).

² Figure 7 is adapted from the North American Industry Classification System (NAIC) Canada 2012.

Table 4. Illicit drug overdose deaths by industry of work and health authority¹

| Industry | Interior | | Fraser | | Van. Coastal | | Island | | Northern | | Total | |
|-------------------------------------|-----------|------------|------------|------------|--------------|------------|-----------|------------|-----------|------------|------------|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Trades and Transport | 37 | 55 | 102 | 70 | 34 | 39 | 27 | 41 | 9 | 60 | 209 | 55 |
| Sales and Services | 14 | 21 | 24 | 16 | 26 | 30 | 15 | 23 | 3 | 20 | 82 | 21 |
| Natural Resources and Agriculture | 9 | 13 | 8 | 5 | 5 | 6 | 10 | 15 | 2 | 13 | 34 | 9 |
| Art, Culture, Recreation and Sport | - | - | 3 | 2 | 6 | 7 | 2 | 3 | - | - | 11 | 3 |
| Education, Law, Government Services | 2 | 3 | - | - | 1 | 1 | 3 | 5 | - | - | 6 | 2 |
| Management | 1 | 1 | 2 | 1 | 5 | 6 | - | - | - | - | 8 | 2 |
| Natural and Applied Sciences | - | - | 1 | 1 | 1 | 1 | 4 | 6 | - | - | 6 | 2 |
| Business, Finance, Administration | 2 | 3 | 2 | 1 | 3 | 3 | 2 | 3 | 1 | 7 | 10 | 3 |
| Health Occupations | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | - | - | 10 | 3 |
| Unknown | - | - | 1 | 1 | 4 | 5 | 1 | 2 | - | - | 6 | 2 |
| Total² | 67 | 100 | 146 | 100 | 88 | 100 | 66 | 100 | 15 | 100 | 382 | 100 |

¹Percentages and counts are based on employed persons only.

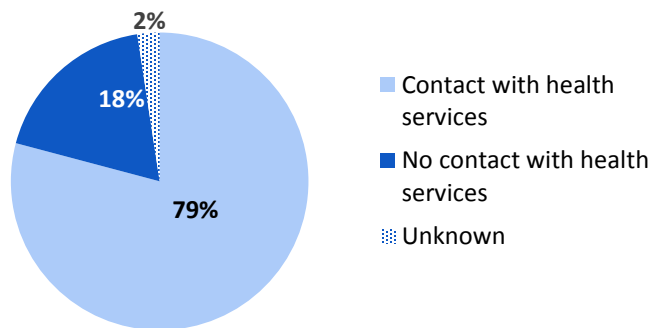
²Percentages may not sum to 100 due to rounding.

Medical History

Approximately four in every five decedents were reported to have had contact with health services in the year preceding death. This reporting is based on a review of medical records and/or contacts with family members, friends, or others in contact with the decedent.

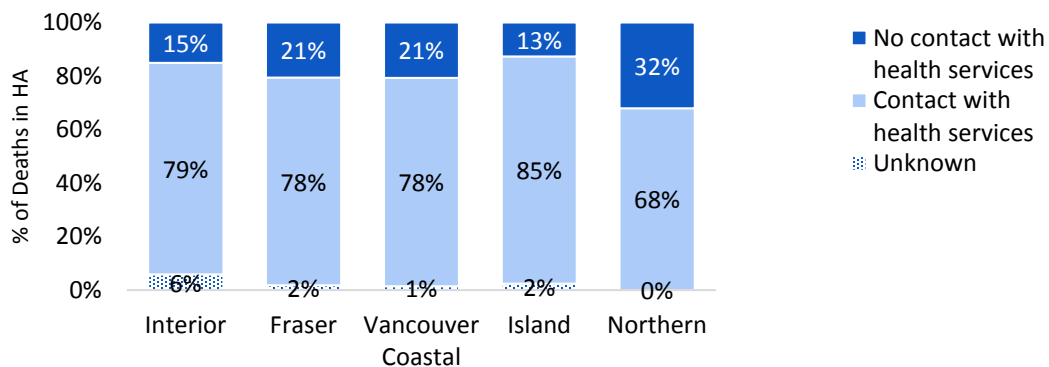
Seventy-nine percent of people (690/872) who died from an illicit drug overdose death reportedly had contact with health care services in the year preceding death. (Figure 8).

Fig. 8. Illicit drug overdose deaths by contact with health services in the year preceding death



Health service contact in the year preceding death ranged from 68% in Northern Health to 87% in Island Health (Figure 9). However, because of the small number of cases for Northern Health, this percentage should be interpreted with caution.

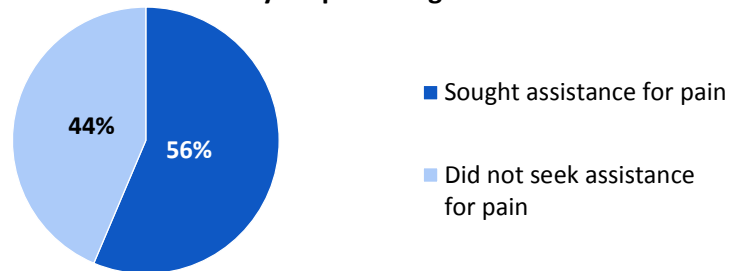
Fig. 9. Illicit drug overdose deaths by contact with health services in the year preceding death: Breakdown by health authority*



Pain-Related

Of the 690 members of the study cohort who had contact with health services in the year preceding death, 389 (56%) had sought assistance for pain-related issues (Figure 10). This represents 45% of the total study cohort (389/872).

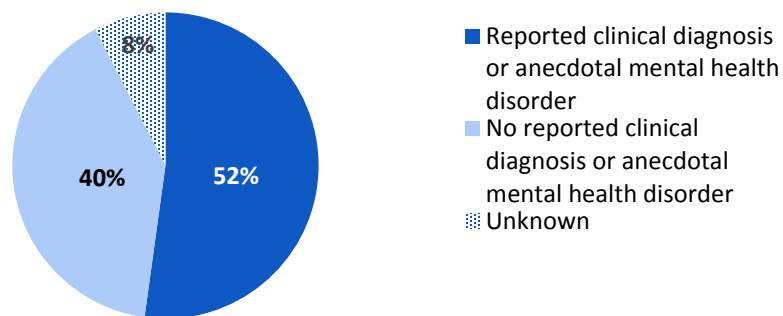
Fig. 10. Illicit drug overdose deaths and pain among decedents with contact with health services in year preceding death



Mental Health

More than half of the cohort (455/872) (52%) were reported to have had a clinical diagnosis or anecdotal evidence of a mental health disorder (Figure 11). Please note that this information is obtained from either medical records and/or reports from family and/or friends and the data should be interpreted with caution.

Fig. 11. Illicit drug overdose deaths and reported mental health disorders

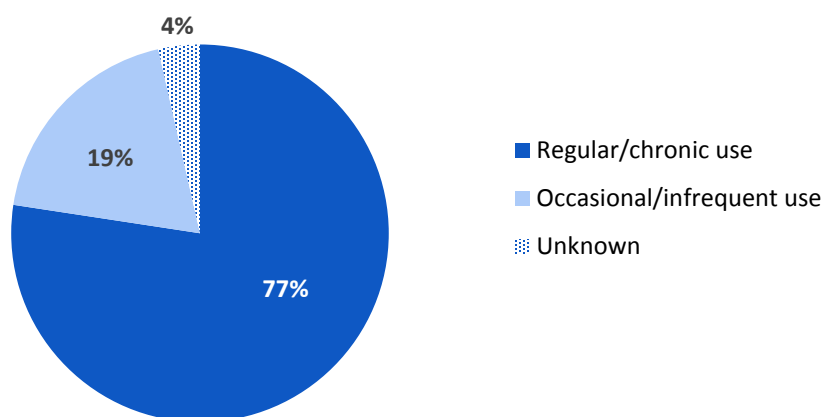


Pattern of Illicit Drug Use

More than three-quarters of people were reported to have been chronic or regular users of illicit drugs.

Seventy-seven percent of people in the study cohort (675/872) were reported to be regular or chronic users of drugs (Figure 12). This is similar to the proportion reported in a recently published BC Coroners Service Death Review Panel report on illicit drug overdoses.^{vi}

Fig. 12. Illicit drug overdose deaths by pattern of illicit drug use



Pattern of illicit drug use refers to the frequency that someone used drugs in the year preceding death as reported by family, friends, medical contacts etc. The categories have been defined as:

- **Occasional/infrequent user:** Casual/recreational/non-problematic use. Has negligible health or social impacts.
- **Regular/chronic user:** Problematic use, use at an early age, or use that begins to have negative health impacts for individuals, family/friends) / daily use that has become habitual and compulsive despite negative health and social effects.
- **Unknown:** Information not available

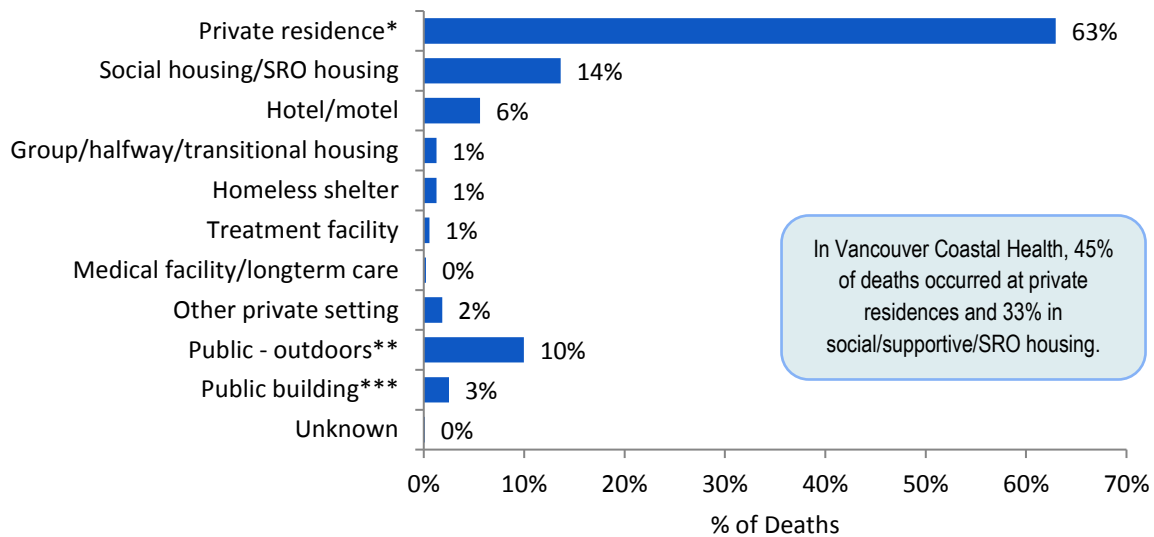
The complexity of illicit drug overdose cases can make it challenging for coroners to collect reliable information on the circumstances surrounding the overdose. In some cases, for instance, individuals interviewed by the coroner may not be aware of a decedent's drug use history. As such, data should be interpreted with caution.

Overdose Location

Sixty-three percent of people were reported to have overdosed in a private residence.

Sixty-three percent of illicit drug overdose deaths occurred in private residences, followed by social, supportive, or SRO housing (14%) and public outdoor locations (10%) (Figure 13).

Fig. 13. Illicit drug overdose deaths by overdose location



*A private residence can be one's own home, a shared home, or a friend/relative's home

**Includes vehicle, street, park, any public space other than around home

***Includes restaurants, bars, gas stations, etc.

Forty-five percent of deaths in Vancouver Coastal Health occurred at private residences and 33% in social/supportive/SRO housing. In comparison, the percentage of illicit drug overdose deaths occurring in private residences in health authorities other than Vancouver Coastal ranged from 65% to 74%. After Vancouver Health, Island and Northern Health had the next highest numbers of illicit drug overdose deaths at social/supportive/SRO housing (9% each) (Table 5).

| Overdose Location | Interior | | Fraser | | Van. Coastal | | Island | | Northern | | Total | |
|------------------------------------|------------|------------|------------|------------|--------------|------------|------------|------------|-----------|------------|------------|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Private residence ¹ | 95 | 70 | 201 | 74 | 119 | 45 | 112 | 69 | 22 | 65 | 549 | 63 |
| Social/supportive/SRO | 8 | 6 | 6 | 2 | 87 | 33 | 15 | 9 | 3 | 9 | 119 | 14 |
| Hotel/motel | 12 | 9 | 12 | 4 | 18 | 7 | 4 | 2 | 3 | 9 | 49 | 6 |
| Group/halfway/transitional housing | 3 | 2 | 5 | 2 | 1 | 0 | 2 | 1 | - | - | 11 | 1 |
| Homeless Shelter | - | | 2 | 1 | 4 | 1 | 4 | 2 | 1 | 3 | 11 | 1 |
| Treatment facility | 1 | 1 | 2 | 1 | 2 | 1 | - | - | - | - | 5 | 1 |
| Medical facility/long-term care | 1 | 1 | - | - | 1 | 0 | - | - | - | - | 2 | 0 |
| Other private setting | 4 | 3 | 6 | 2 | 4 | 1 | 1 | 1 | 1 | 3 | 16 | 2 |
| Public – Outdoors ² | 11 | 8 | 33 | 12 | 25 | 9 | 17 | 10 | 1 | 3 | 87 | 10 |
| Public building ³ | 1 | 1 | 6 | 2 | 6 | 2 | 6 | 4 | 3 | 9 | 22 | 3 |
| Unknown | - | - | - | - | - | - | 1 | 1 | - | - | 1 | 0 |
| Total⁴ | 136 | 100 | 273 | 100 | 267 | 100 | 162 | 100 | 34 | 100 | 872 | 100 |

¹A private residence can be one's own home, a shared home, or a friend/relative's home; ²Includes vehicle, street, park, any public space other than around home; ³Restaurants, bars, gas stations, etc.; ⁴Percentages may not sum to 100 due to rounding.

Table 6 displays the age and sex of people who overdosed in private residences, social/ supportive/SRO housing, and public outdoor locations. Outdoor locations had the highest percentage of male decedents (92%).

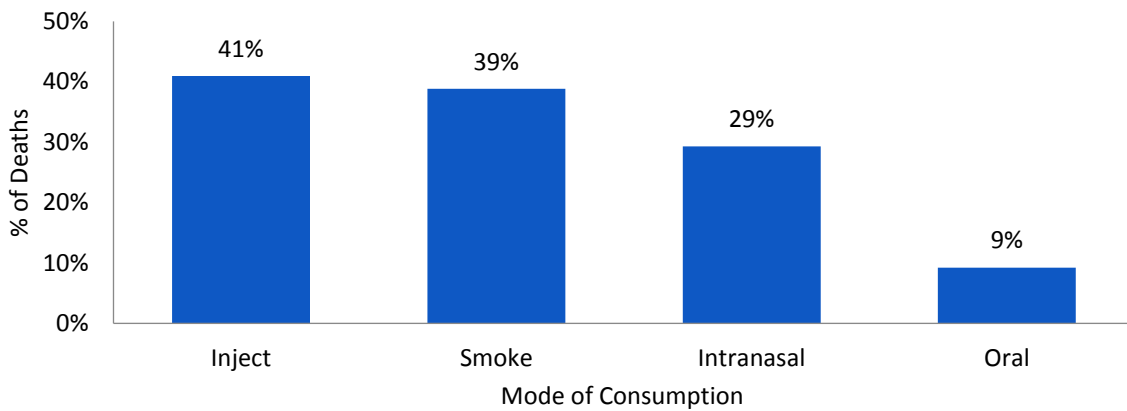
| Characteristic | Overdose Location | | | | | |
|------------------|-------------------|----|-----------------------|----|-------------------|----|
| | Private Residence | | Social/Supportive/SRO | | Public - Outdoors | |
| | No. | % | No. | % | No. | % |
| Sex | | | | | | |
| Male | 434 | 79 | 91 | 76 | 100 | 92 |
| Female | 115 | 21 | 28 | 24 | 9 | 8 |
| Age Group | | | | | | |
| 15-18 | 16 | 3 | - | - | 2 | 2 |
| 19-29 | 105 | 19 | 10 | 8 | 29 | 27 |
| 30-39 | 151 | 28 | 24 | 20 | 32 | 29 |
| 40-49 | 128 | 23 | 32 | 27 | 24 | 22 |
| 50-59 | 113 | 21 | 37 | 31 | 20 | 18 |
| 60-69 | 33 | 6 | 16 | 13 | 2 | 2 |
| 70+ | 3 | 1 | - | - | - | - |

¹Percentages may not sum to 100 due to rounding.

Mode of Consumption

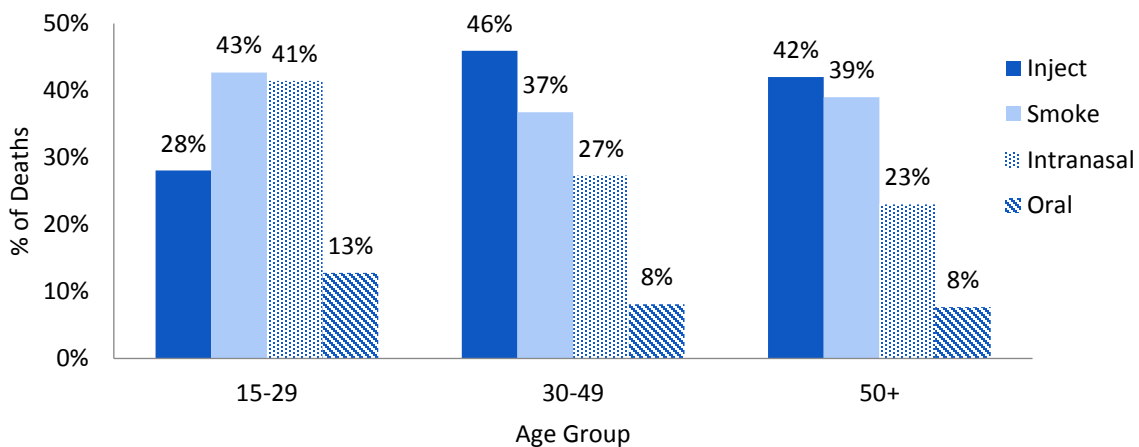
Injection (41%) and smoking (39%) were the most common modes of consumption, followed by intranasal (29%) and oral (9%). (Figure 14). Mode of consumption could not be determined for 14% of cases. In some cases, more than one mode of consumption was used.

Fig. 14. Illicit drug overdose deaths by mode of consumption*

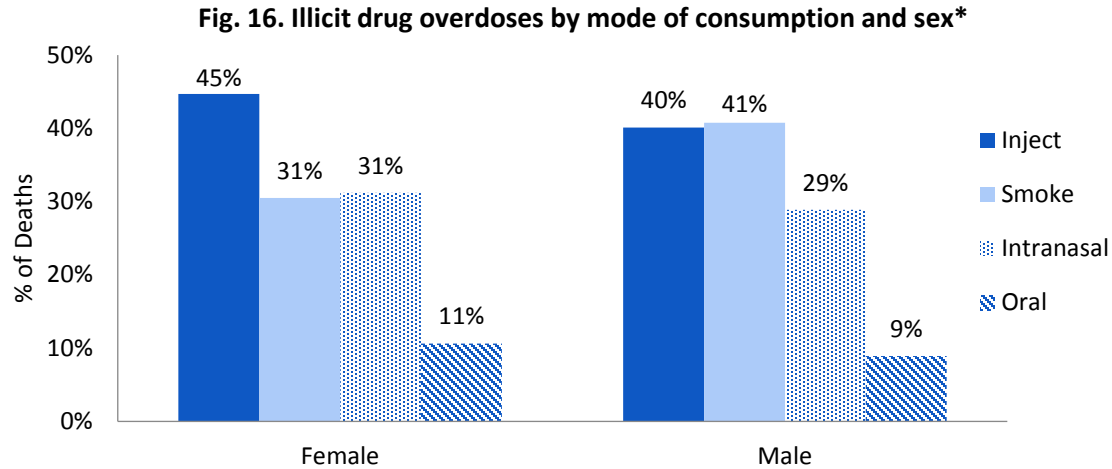


In the 15-29 age group, smoking (43%) and intranasal administration (41%) were the most common modes of consumption at the time of overdose. Injection was the most common mode of consumption among those aged 30-49 (46%) and 50+ (42%). (Figure 15).

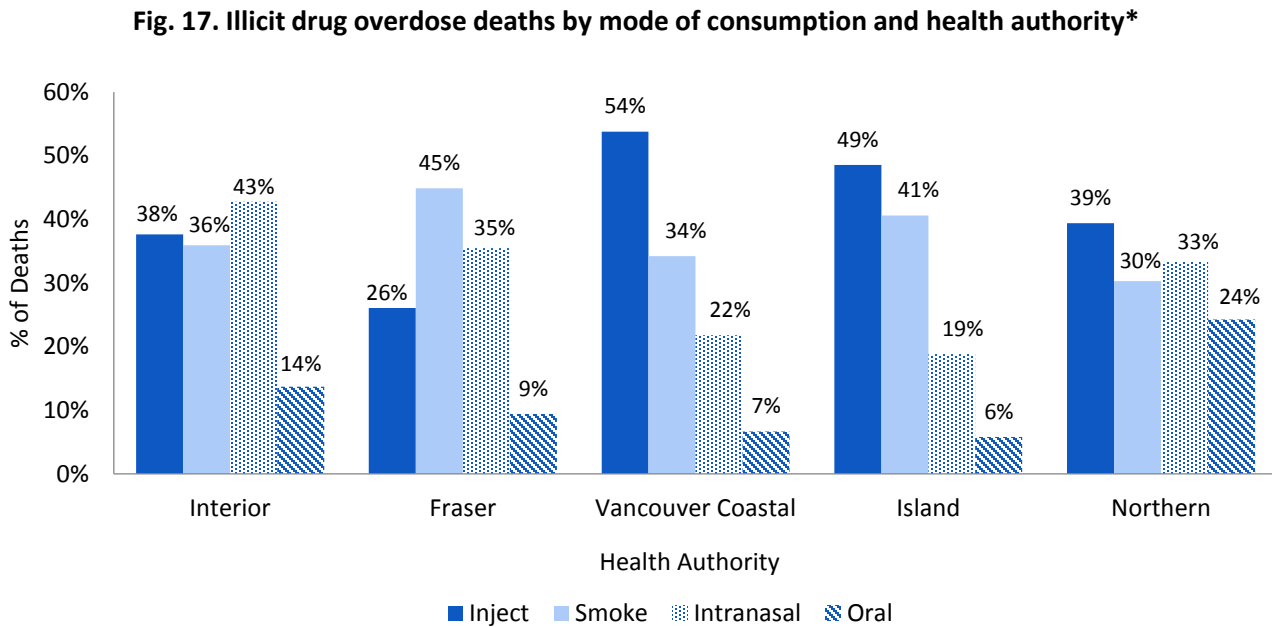
Fig. 15. Illicit drug overdose deaths by mode of consumption and age group



Injection was the most common mode of consumption among females (45%). For males, injection (40%) and smoking (41%) were the two most common modes of consumption. (Figure 16).



In the Interior, the most frequent mode of consumption at the time of death was intranasal administration (43%). In Fraser Health, it was smoking (45%). Injection was the most common mode of consumption in Vancouver Coastal (54%), Island Health (49%), and Northern Health (39%). (Figure 17).



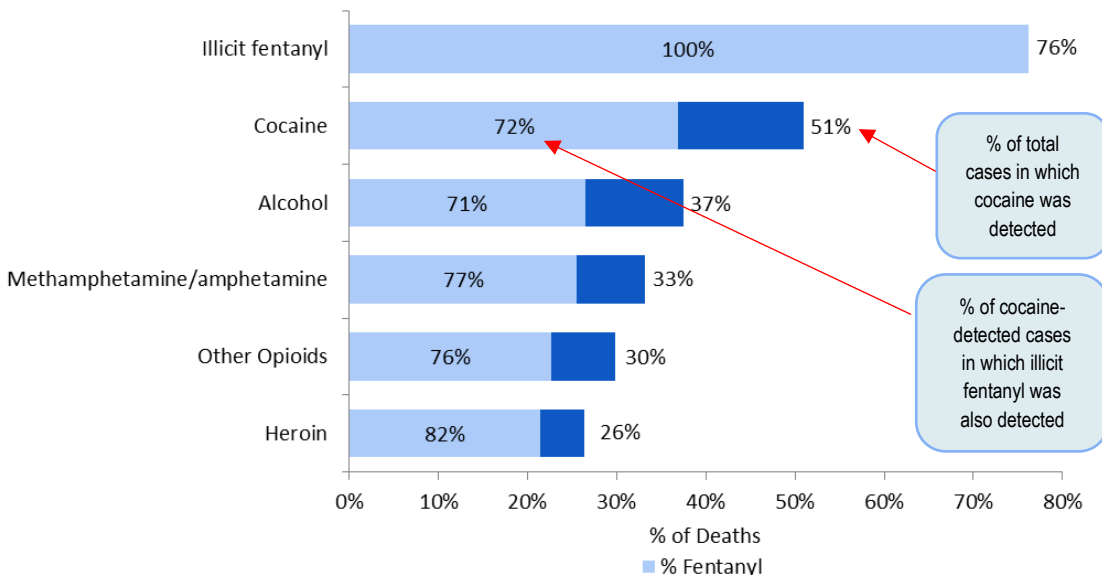
Drugs Detected

In an analysis of cases for which toxicology results were available (843), illicit fentanyl was detected in 76% of illicit drug overdose deaths (642/843), making it the most common drug detected. Cocaine was detected in 51% (430) of deaths, methamphetamine/amphetamines in 33% (280) of deaths, and heroin in 26% (222) of deaths. Alcohol was detected in one-third (33%) of deaths. Figure 18 displays the top six drugs detected in illicit drug overdose deaths.

Illicit fentanyl was detected in 72% of cocaine-detected cases, 77% of methamphetamine/amphetamine-detected cases, and 82% of heroin-detected cases. Cases involving more than one drug type may be represented multiple times. Individual drugs detected may or may not have been contributory to death.

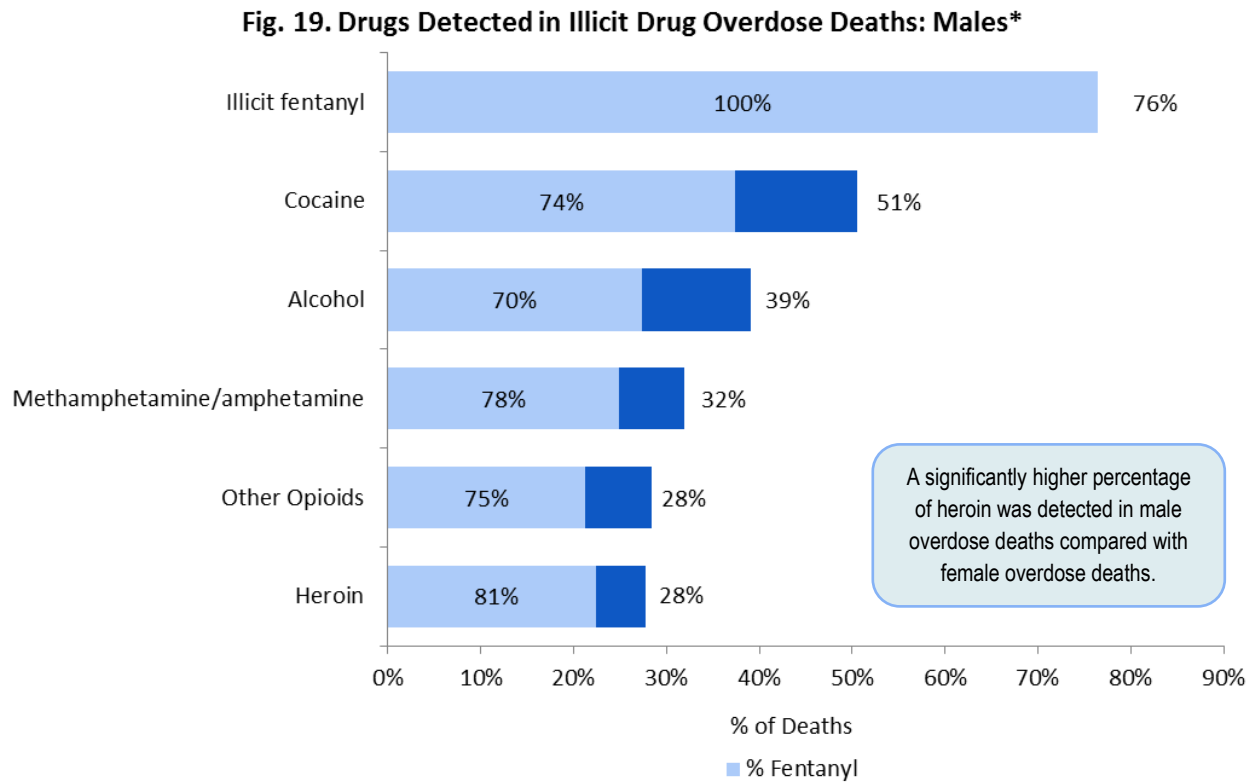
In comparison, the Government of Canada’s Drug Analysis Service (DAS), which tests controlled drugs and substances provided by law enforcement agencies, found that the top controlled substances identified in BC were cocaine, cannabis, methamphetamine and heroin in 2016 and cocaine, fentanyl, cannabis, and methamphetamine in 2017.^{vii}

Fig. 18. Drugs Detected in Illicit Drug Overdose Deaths*

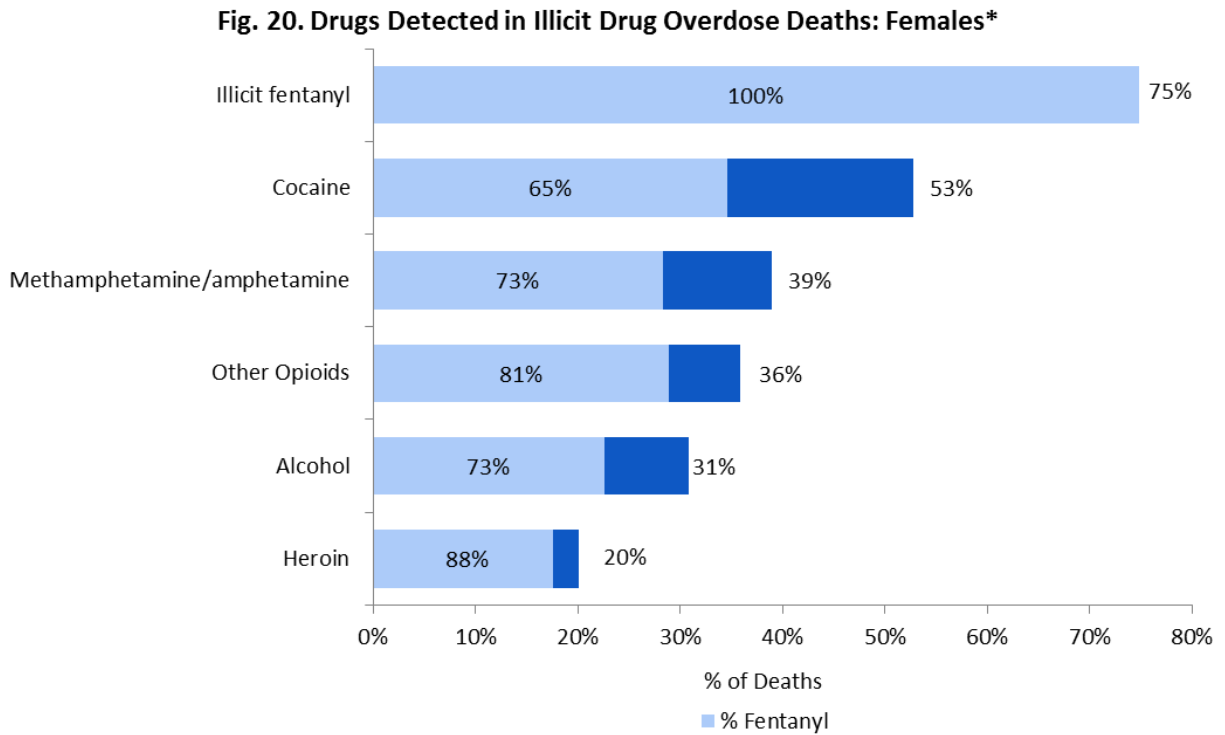


Notes: The majority of cases involve more than one drug type. Drugs are not mutually exclusive. One case may be represented multiple times in the above figure. For example, a case in which cocaine, alcohol, and heroin were detected would be represented in each of the respective categories in the above figure.

For males, illicit fentanyl was detected in 76% of deaths where full toxicology results were available. Cocaine was detected in 51% of deaths, methamphetamine/amphetamine in 32%, and heroin in 28%. In 74% of cocaine-detected cases, 78% of methamphetamine/amphetamine-detected cases, and 81% of heroin-detected cases, fentanyl was also present. (Figure 19).



For females, illicit fentanyl was detected in 75% of deaths where full toxicology results were available. Cocaine was detected in 53% of deaths, methamphetamine/amphetamine in 39% of deaths, and heroin in 20% of deaths. In 65% of cocaine-detected cases, 73% of methamphetamine/amphetamine-detected cases, and 88% of heroin-detected cases, fentanyl was also present. (Figure 20). A significantly higher percentage of heroin was detected in male overdose deaths compared with female overdose deaths.



A breakdown of findings by age group showed that 85% of 15-29 year olds tested positive for fentanyl, vs. 79% of 30-49-year olds and 64% of people aged 50+. Cocaine was detected in 46% of 15-29-year olds, 50% of 30-39-year olds, and 57% of 50+-year olds. (Figures 21-23). A significantly higher percentage of fentanyl was detected among 15-29-year olds compared with 50+-year olds.

Fig. 21. Drugs Detected in Illicit Drug Overdose Deaths: 15-29-Year Olds*

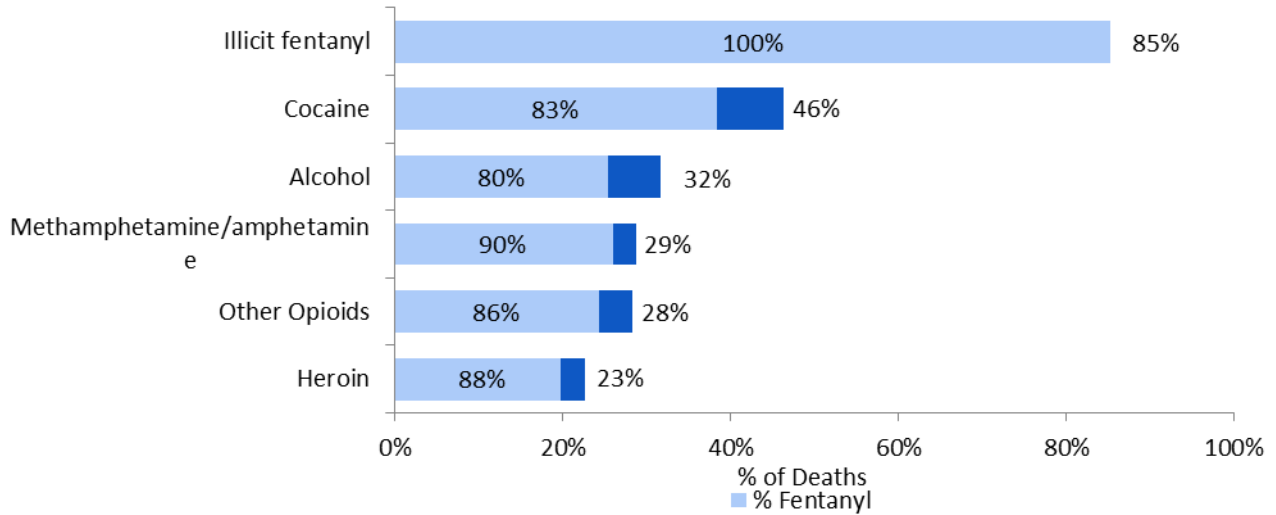


Fig. 22. Drugs Detected in Illicit Drug Overdose Deaths: 30-49-Year Olds*

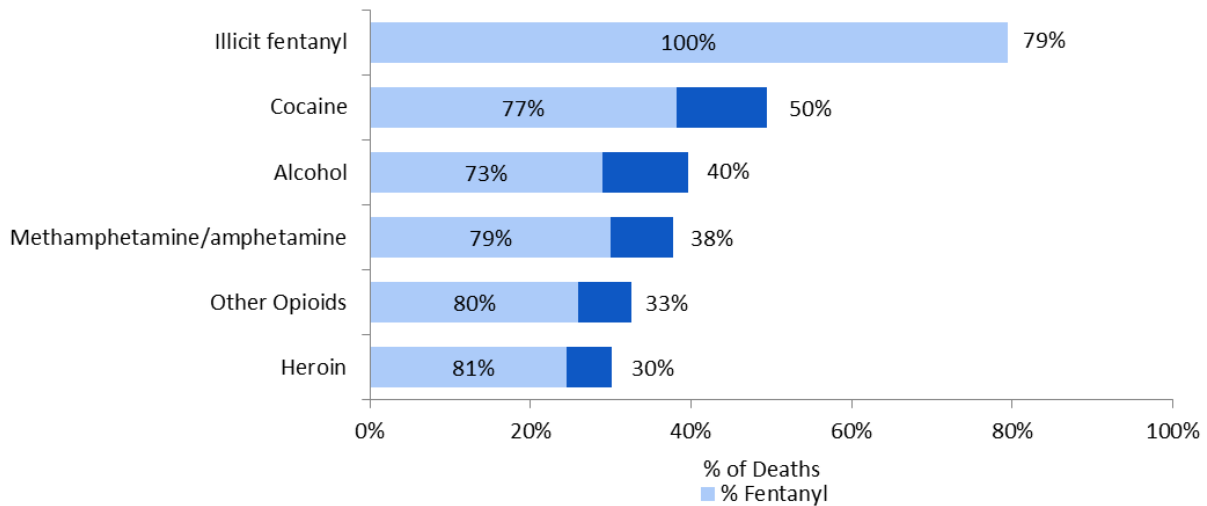
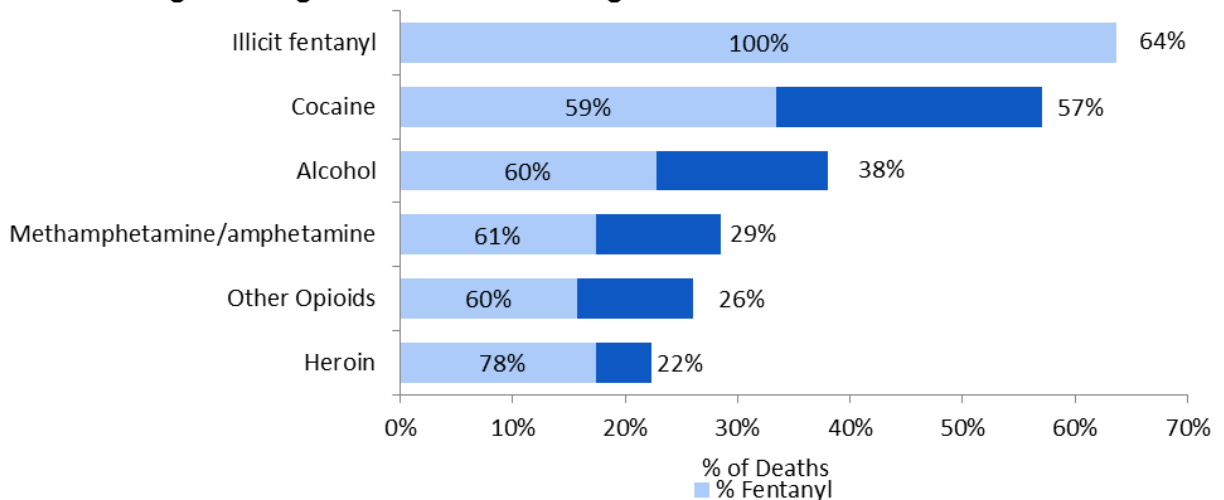


Fig. 23. Drugs Detected in Illicit Drug Overdose Deaths: 50+-Year Olds*



*Additional notes to Figures 18-23:

- (1) *Results of toxicological testing for substances were available for 97% of deaths (843). Results were not available when toxicology screening was done at a hospital prior to death.*
- (2) *Deaths involving more than one drug or drug type are counted multiple times.*
- (3) *Heroin and 6-acetylmorphine, which is used as a marker of heroin, are rapidly degraded. In addition, the methods used to detect morphine were not very sensitive during this period. Therefore, the percentage of deaths with heroin and other opioids detected may be an underestimate.*
- (4) *Significance was determined through a Chi Square test ($p \leq 0.05$).*
- (5) *Details of drug categories are as follows:*

Cocaine - *Includes benzoylecgonine, cocaethylene, cocaine, cocaine metabolites, and levamisole.*

Ethyl alcohol - *Includes cocaethylene and ethyl alcohol.*

Heroin - *Includes 6-monoacetyl morphine.*

Illicit fentanyl – *Includes fentanyl and fentanyl analogues (e.g. acetylfentanyl, carfentanil).*

Methamphetamine/amphetamine – *Includes methamphetamine and amphetamine.*

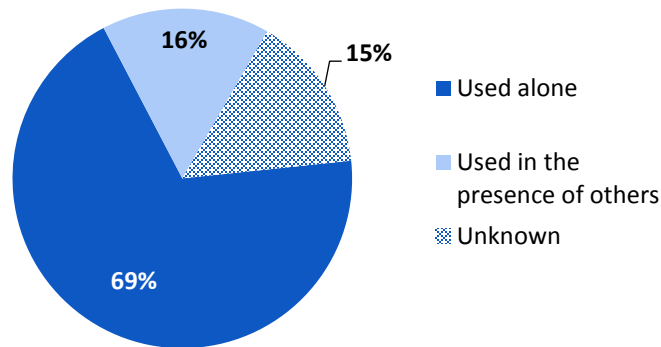
Other opioids - *Includes codeine, prescription fentanyl, hydromorphone, meperidine, mitragynine, morphine, oxycodone, pentazocine, and tramadol. Excludes 6-monoacetyl morphine, methadone, buprenorphine, illicit fentanyl and fentanyl analogues.*

People Who Used Alone

More than two-thirds of people studied reportedly used drugs alone. 'Used alone' represents where the decedent used illicit drugs in the absence of other people at the time of consumption. Examples include decedents who used drugs while alone in a vehicle, bedroom, or washroom. The complexity of illicit drug overdose cases can make it challenging for coroners to collect reliable information on the circumstances surrounding the overdose. As such, data should be interpreted with caution.

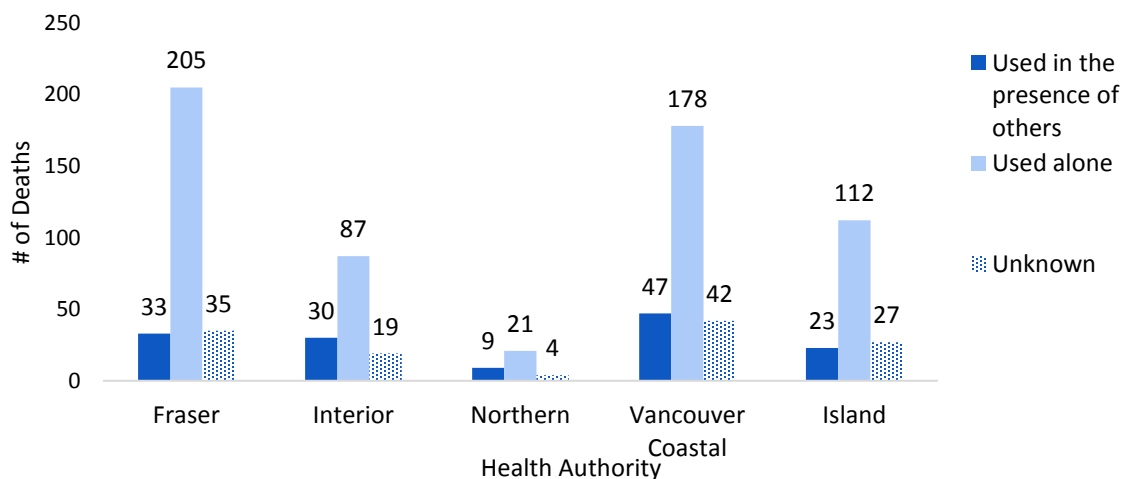
Sixty-nine percent of people used their drugs alone (Figure 24). The actual percentage is likely higher, as coroners were unable to determine whether the decedent used alone or in the presence of others in 15% of cases.

Fig. 24. Illicit drug overdose deaths and using alone



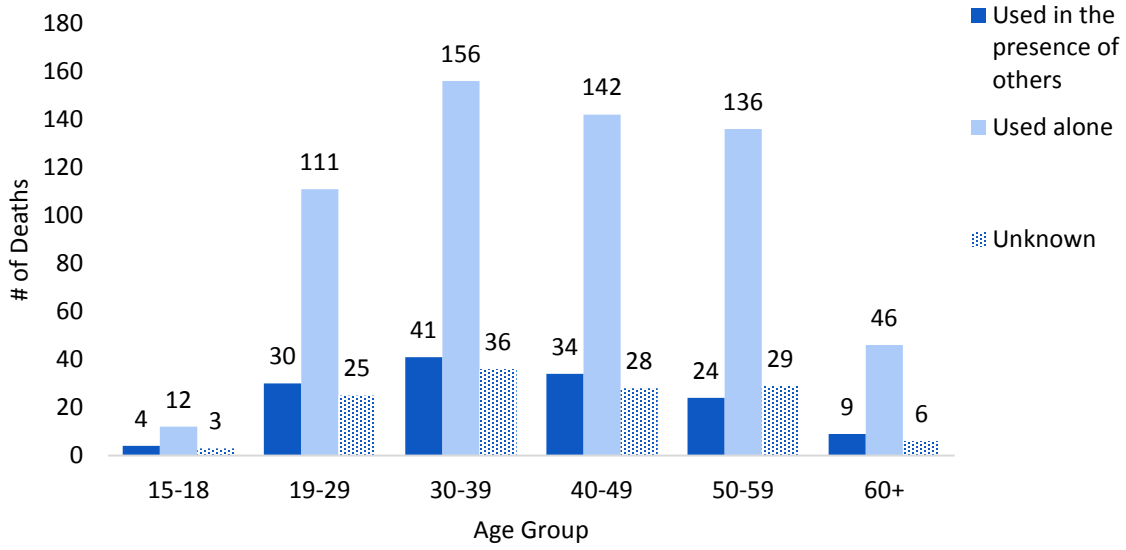
There was a higher frequency of people using alone than in the presence of others within all health authorities. (Figure 25).

Fig. 25. Illicit drug overdoses and using alone by health authority



There was a higher frequency of people using alone than in the presence of other across all age groups. (Figure 26).

Fig. 26. Illicit drug overdoses and using alone by age group



Definitions

Housing/Overdose Locations

Group, half-way, transitional housing

Group, halfway or community residential homes are private residences for persons who are unable to reside with their families but require an element of caregiver support. They are designed to maximize independence and support the development of social, vocational, recreational and life skills. These homes can be used to house children and youth, adults or seniors with chronic disabilities, persons seeking recovery from problematic substance use, or persons re-integrating with the community following a period of incarceration. The number of residents is usually low, and there is at least one trained caregiver present 24 hours/day. These homes are generally operated by non-profit societies, like Community Living BC, but may also be contracted through Ministries. They range from single-family dwellings to apartment complexes.

Homeless

Homeless includes the following three categories³:

Sheltered homeless: Persons staying at an emergency shelter (overnight) or temporarily sheltered (less than 30 days) by friends or family, in a short-term shelter, safe house for youth, or transition house for women and children fleeing violence.

Street homeless: Persons living outdoors, in a make-shift shelter, a parked vehicle, or any other structure not intended for habitation.

Homeless: Persons with no fixed address, but unknown whether street or sheltered.

Private residence

Private residence includes one's own home, shared home, or a friend/relative's house.

Social, supportive, or SRO housing

Social housing is housing for low and moderate income singles and families, usually subsidized through a variety of mechanisms, including senior government support.

Supportive housing is non-market housing that, in addition to rental subsidy to make the housing affordable, also includes ongoing and targeted support services to residents who cannot live independently due to health problems and other disability.

SRO (Single Room Occupancy) housing is the most affordable form of rental housing provided by the

³Adapted from City of Vancouver definitions (Greater Vancouver Regional Steering Committee on Homelessness. 2009. *Still on our streets . . . Results of the 2008 Metro Vancouver Homeless Count*. Retrieved from <http://www.metrovancouver.org/services/regional-planning/homelessness/HomelessnessPublications/HomelessCountReport2008Feb12.pdf>

market. A typical SRO unit is one room of about 10 x 10 feet with shared bathrooms and minimal or no cooking facilities. May be owned and operated by government or a non-profit partner.^{viii}

Treatment Facility

A treatment centre is a facility that provides therapeutic intervention for persons struggling with mental health, problematic substance use, or other behavioural health issues. These facilities may be directly operated by a health authority of Ministry, may be contracted to a third provider by a health authority of Ministry, or may be privately operated. Treatment facilities usually direct services to a particular population (i.e. children and youth, or alcohol addiction), are typically residential (though day/outpatient treatment centres exist), and may be useful when less intensive community-based services have been unsuccessful. Treatment is usually time-limited with the intent to stabilize issues of concern so that persons may re-integrate back into their home communities.

Industries of Work^{ix}

Art, Culture, Recreation and Sport Occupations

Technical occupations in libraries, public archives, museums and art galleries. Photographers, graphic art technicians, announcers and other performers, creative designers, athletes, coaches, referees and related occupations.

Business, Finance, Administration Occupations

Human resource and business professionals, administrative and financial supervisors, finance, insurance and related business administrative occupations. Auditors, accountants, investment professionals. Distribution, tracking and scheduling co-ordination occupations. Office support occupations.

Education, law and social, community and government service occupations

University school professors, college and vocational instructors, school teachers and counsellors, teaching and research assistants. Judges, lawyers, notaries. Psychologists, social workers, family and marriage counsellors, probation and parole officers, employment counsellors. Economists and economic policy researchers and analysts. Marketing researchers and consultants. Social/health /education policy researchers. Recreation/sport/fitness policy researchers, consultants and program officers.

Health Occupations

Nurses, physicians, dentists, veterinarians, optometrists, chiropractors, pharmacists, dietitians, nutritionists, therapy and assessment professionals. Any technical profession in this field.

Management occupations

Senior/Middle managers in financial, communications and other business services. Senior Managers in health, education, social and community services group. Senior managers in trade, broadcasting, construction, transportation, production and utilities. Includes legislators.

Natural and Applied Sciences Occupations

Civil, mechanical, electrical, chemical and other engineers. Architects, urban planners and surveyors. Mathematicians, statisticians, and actuaries. Computer and information systems professionals. Any technical profession in this field.

Natural resources, agriculture and related production occupations

Supervisors and technical occupations in natural resources, agriculture and related production. Contractors and supervisors, mining, oil and gas. Underground miners, oil and gas drillers and related occupations. Logging machinery operators. Fishing vessel masters and fishermen/women. Logging and forestry workers. Agriculture and horticulture workers. Other works in fishing and trapping and hunting occupations. Harvesting, landscaping and natural resources labourers.

Occupations in manufacturing and Utilities

Supervisors, assembly and fabrication. Utilities equipment operators and controllers. Water and waste treatment plant operators. Machine operators and related workers in chemical, plastic and rubber processing. Machine operators and related works in pulp and paper production and wood processing and manufacturing. Machine operators and related workers in textile, fabric, fur and leather products. Machine operators and related workers in food, beverage and associated products processing.

Sales and Service Occupations

Retail sales supervisors, technical sales specialists in wholesale trade and retail and wholesale buyers. Insurance, real estate and financial sales occupations. Chefs and cooks. Butchers and bakers. Specialized occupations in personal and customer services. Retail salesperson. Occupation in travel and accommodation. Tourism services. Security guards and security services. Customer and information services representatives. Cashiers. Cleaners.

Trades, transport and equipment operators and related occupations

Contractors and supervisors, industrial, electrical and construction trades and related workers. Machining, metal forming, electrical trades and electrical powerlines, telecommunication workers. Plumbers, pipefitters. Carpenters and cabinetmakers. Masonry and plastering trades. Automotive service technicians. Train crew operators, crane operators, drillers, and blasters.

Longshore workers. Transport and equipment operators (installers/repairers). Motor vehicle and transit drivers. Trades helpers, construction labourers and related occupations.

Patterns of Illicit Drug Use⁴

Pattern of illicit drug use

Pattern of illicit drug use refers to the frequency that someone used drugs in the year preceding death as reported by family, friends, medical contacts etc. The following definitions were applied:

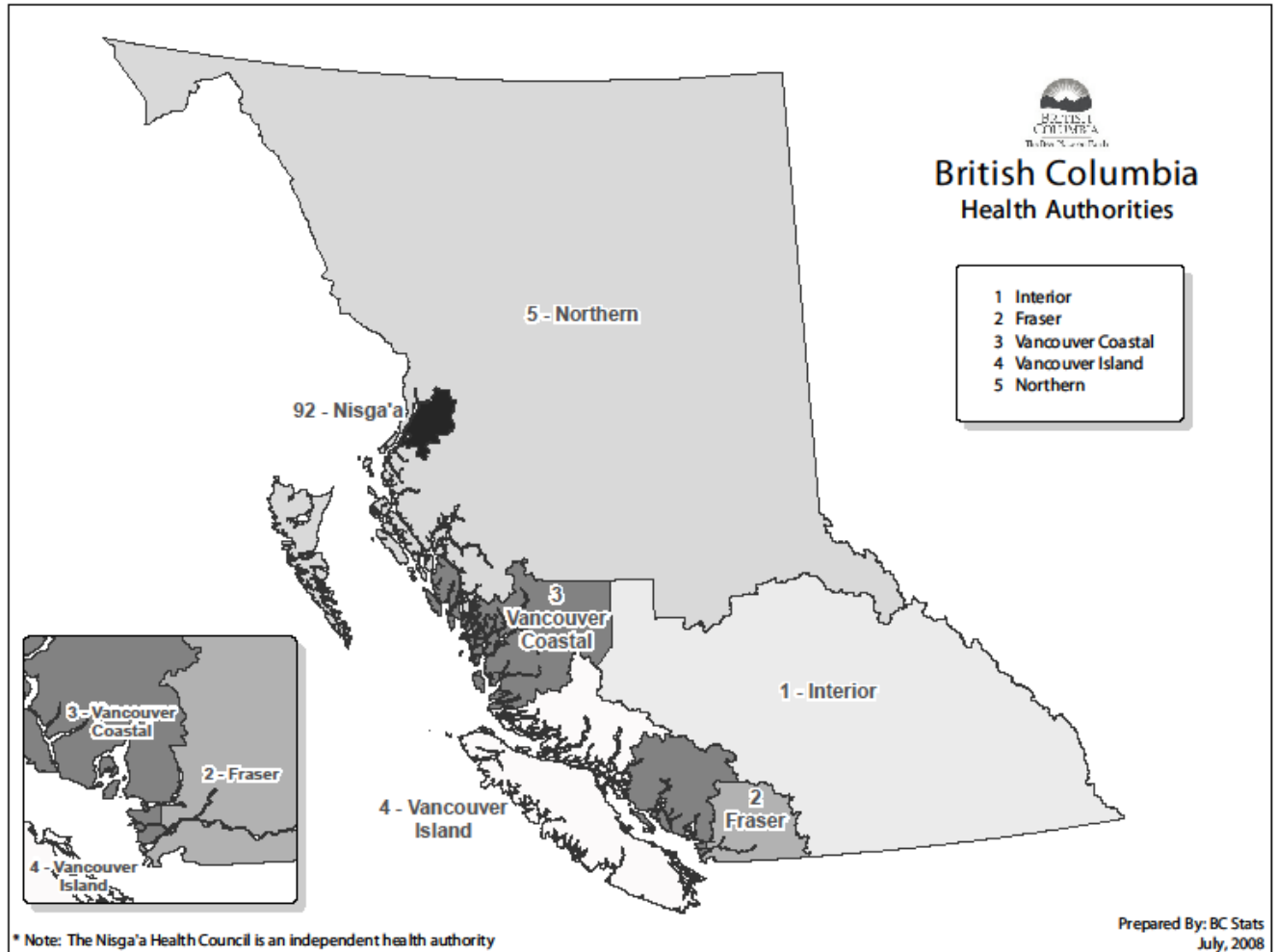
Occasional/infrequent user: Casual/recreational/non-problematic use. Has negligible health or social impacts.

Regular/chronic user: Problematic use, use at an early age, or use that begins to have negative health impacts for individuals, family/friends) / daily use that has become habitual and compulsive despite negative health and social effects.

Unknown: Information not available

⁴ Adapted from Ministry of Health Services; Ministry of Children and Family Development. (2010, November). *Healthy minds, healthy people: A ten-year plan to address mental health and substance use in British Columbia*. Retrieved from http://www.health.gov.bc.ca/library/publications/year/2010/healthy_minds_healthy_people.pdf
Ministry of Public Safety and Solicitor General September 27, 2018

Appendix



More information about the health regions can be found at <http://www2.gov.bc.ca/gov/content/data/geographic-data-services/land-use/administrative-boundaries/health-boundaries>

Endnotes

ⁱ BC Coroners Service. (2018, May). *Fentanyl-detected illicit drug overdose deaths in BC January 1, 2012 to June 30, 2018*. Retrieved from <https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/fentanyl-detected-overdose.pdf>

ⁱⁱ BC Coroners Service. (2018, August). *Illicit drug overdose deaths in BC January 1, 2008 – July 31, 2018*. Retrieved from <https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/illicit-drug.pdf>

ⁱⁱⁱ Statistics Canada. (2017, November). *British Columbia [Province] and Canada [Country] (table). Census profile. 2016 Census. Statistics Canada catalogue no. 98-316-X2016001*. Ottawa. Retrieved from <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>

^{iv} Statistic Canada. (2016). *2016 Census of Population, Statistics Canada Catalogue no. 98-400-X2016304*. Retrieved from <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/dt-td/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=110698&PRID=10&PTYPE=109445&S=0&SHOWALL=0&SUB=999&Temporal=2016,2017&THEME=119&VID=0&VNAMEE=&VNAMEF=>

^v Fraser Health (2018, January). *The hidden epidemic: The opioid overdose emergency in Fraser Health*. Retrieved from https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Topics/Overdose/20180122_hidden_epidemic_overdose_emergency.pdf

^{vi} BC Coroners Service. (2018, April). *BC coroners service death review panel: A review of illicit drug overdoses*. Retrieved from https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/death-review-panel/bccs_illicit_drug_overdose_drp_report.pdf

^{vii} Government of Canada. (2017, November). *Drug analysis service*. Retrieved from <https://www.canada.ca/en/health-canada/services/health-concerns/controlled-substances-precursor-chemicals/drug-analysis-service.html>

^{viii} *Vancouver's Housing and Homelessness Strategy*. (2011, June). *Vancouver's housing and homelessness strategy, 2012-2021: A home for everyone*. Retrieved from <http://vancouver.ca/files/cov/Housing-and-Homeless-Strategy-2012-2021pdf.pdf>

^{ix} Statistics Canada. (2016, May). *National Occupational Classification (NOC) 2011*. Retrieved from <http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=122372>